PUBLIC POLICY FOR FAIRNESS & EFFICIENCY

PMAP 8141: Economy, Society, and Public Policy

September 12, 2019

Fill out your reading report on iCollege!

PLAN FOR TODAY

Economic models

Fixing collective action problems

Power & efficiency

Creating economic policy

Fairness

Pulling policy levers

$$r = \frac{ln(\frac{\text{CPI}_{\text{new}}}{\text{CPI}_{\text{old}}})}{t}$$

2017 – 1980 + 1

1850 – 1750 + 1

“The following table shows the nominal GDP (in 2015 US dollars)”

ECONOMIC MODELS

Y THO?

Why the h*ck am I making you think about game theory?

The world is never this simple!

The predictions are obvious!

Models purposefully shrink the world so we can measure and predict things in it

No economic model can be a perfect description of reality. **But the very process of constructing, testing and revising models, forces economists and policymakers to tighten their views about how an economy works.** This in turn promotes scientific debate over what drives economic behavior and what should (or should not) be done to deal with market failures.

Sam Ouliaris, IMF

No economic model can be a perfect description of reality. **But the very process of constructing, testing and revising models, forces economists and policymakers to tighten their views about how a anything ny works.** This in turn promotes scientific debate over what drives economic behavior and what should (or should not) be done to deal with market failures.

Sam Ouliaris, IMF

GOOD MODELS

Clear / parsimonious

Identify important relationships

Make good predictions

Improve communication

Useful

FIXING COLLECTIVE ACTION PROBLEMS

Perfectly rational individual behavior can create irrational and inferior social outcomes

STAG HUNT

		Bala	
		Hunt stag	**Hunt hare**
Anil	**Hunt stag**	**10, 10**	**0, 2**
	Hunt hare	**2, 0**	**2, 2**

Non-zero-sum

Two pure equilibria

Mixed strategy

Not socially optimal!

COOPERATION IN STAG HUNT LAND

The payoffs for cooperation are greater than the payoffs for defection

There's still an incentive to defect

WHAT STOPS US FROM COOPERATING?

Uneven payoffs

Lack of assurance

Dishonesty

Selfishness

These are all rational things that utility-maximizing people do!

HOW DO WE FIX THIS?

Altruism

Repetition and iteration

Infinitization

Punishment

Norms

Institutions

Public policy

TRAGEDY OF THE COMMONS

		Farmer 2	
		Use water normally	Double water use
Farmer 1	Use water normally	6, 6	2, 8
	Double water use	8, 2	3, 3

INSTITUTIONAL FIXES

Change payoffs so that normal water use is more valuable

Make water common property

Privatize the water and let one person control it

POWER & EFFICIENCY

POWER

The ability to do what we want in opposition to the intentions of others

WHO SHOULD DECIDE?

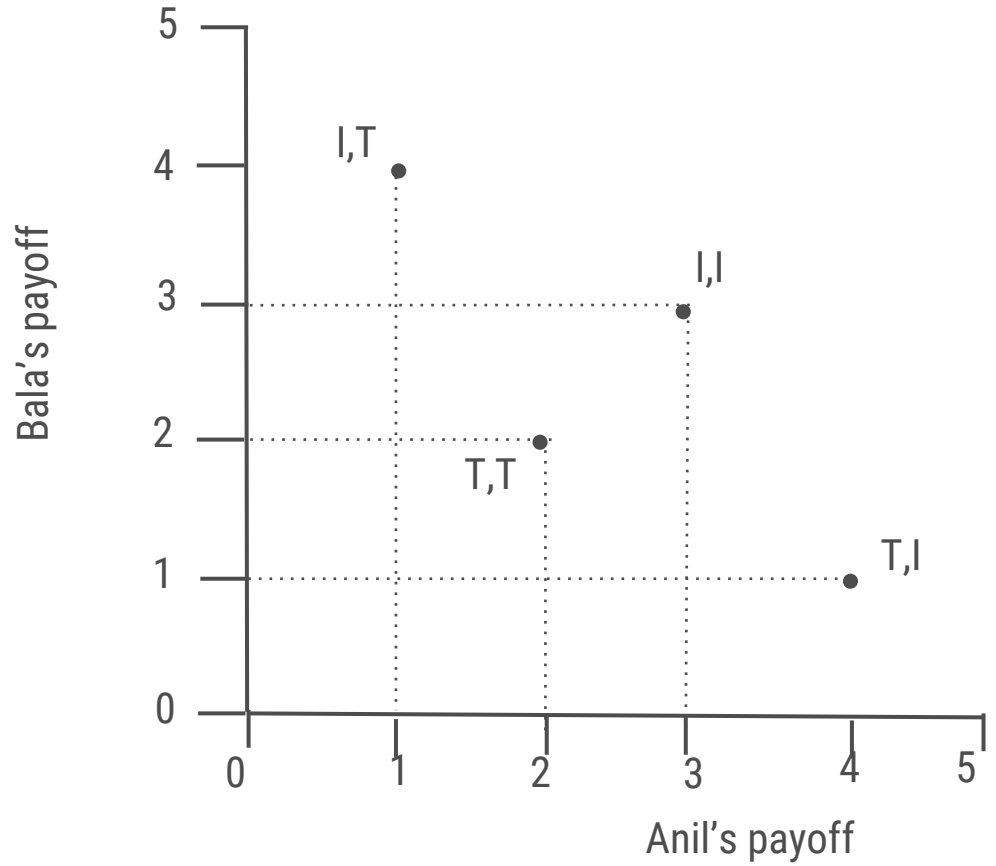
		Bala	
		Left	Right
Anil	Left	Live, Live	Die, Die
	Right	Die, Die	Live, Live

PARETO EFFICIENCY

No alternative allocation where one person would be better off and nobody would be worse off

The most economic pie is consumed without taking pieces away from others

		Bala	
		Magic bugs (I)	**Poison (T)**
Anil	**Magic bugs (I)**	**3, 3**	**1, 4**
	Poison (T)	**4, 1**	**2, 2**



I,I = Both use Integrated Pest Control (IPC)

I,T = Anil uses IPC, Bala uses Terminator

T,I = Anil uses Terminator, Bala uses IPC

T,T = Both use Terminator

TRAGEDY OF THE COMMONS

		Farmer 2	
		Use water normally	Double water use
Farmer 1	Use water normally	6, 6 ★	2, 8 ★
	Double water use	8, 2 ★	3, 3

IS PARETO THE BEST STANDARD?

There can be more than one Pareto-efficient allocation (or none!)

There are no rankings

No consideration of power

CREATING ECONOMIC POLICY

Annual income	Tax rate
$0–$10,000	0%
$10,001–$50,000	10%
$50,001–$100,000	20%
$100,001–$300,000	30%
$300,000–$∞	50%

1: Progressive tax rate

Increasing marginal rates

2: Flat tax

15% regardless of income

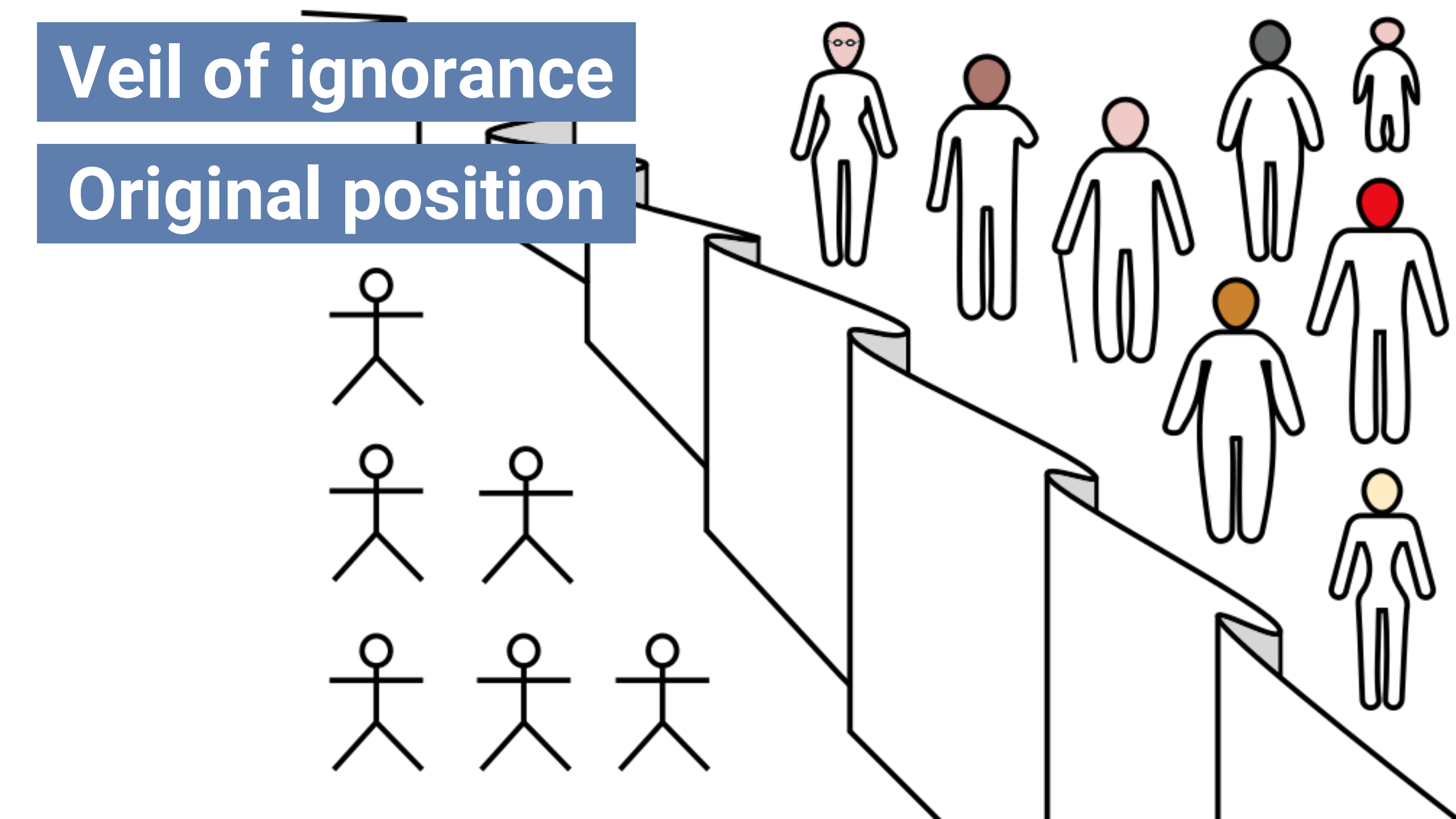
$80,000 × 15% = **$12,000**

Jody earns $80,000 a year.

She pays 0% on first $10,000	$10,000 × 0% = $0
She pays 10% on the next $40,000	$40,000 × 10% = $4,000
She pays 20% on the last $30,000	$30,000 × 20% = $6,000
Total tax:	$0 + $4,000 + $6,000 = **$10,000**

Veil of ignorance

Original position



FAIRNESS

EFFICIENCY VS. EQUITY

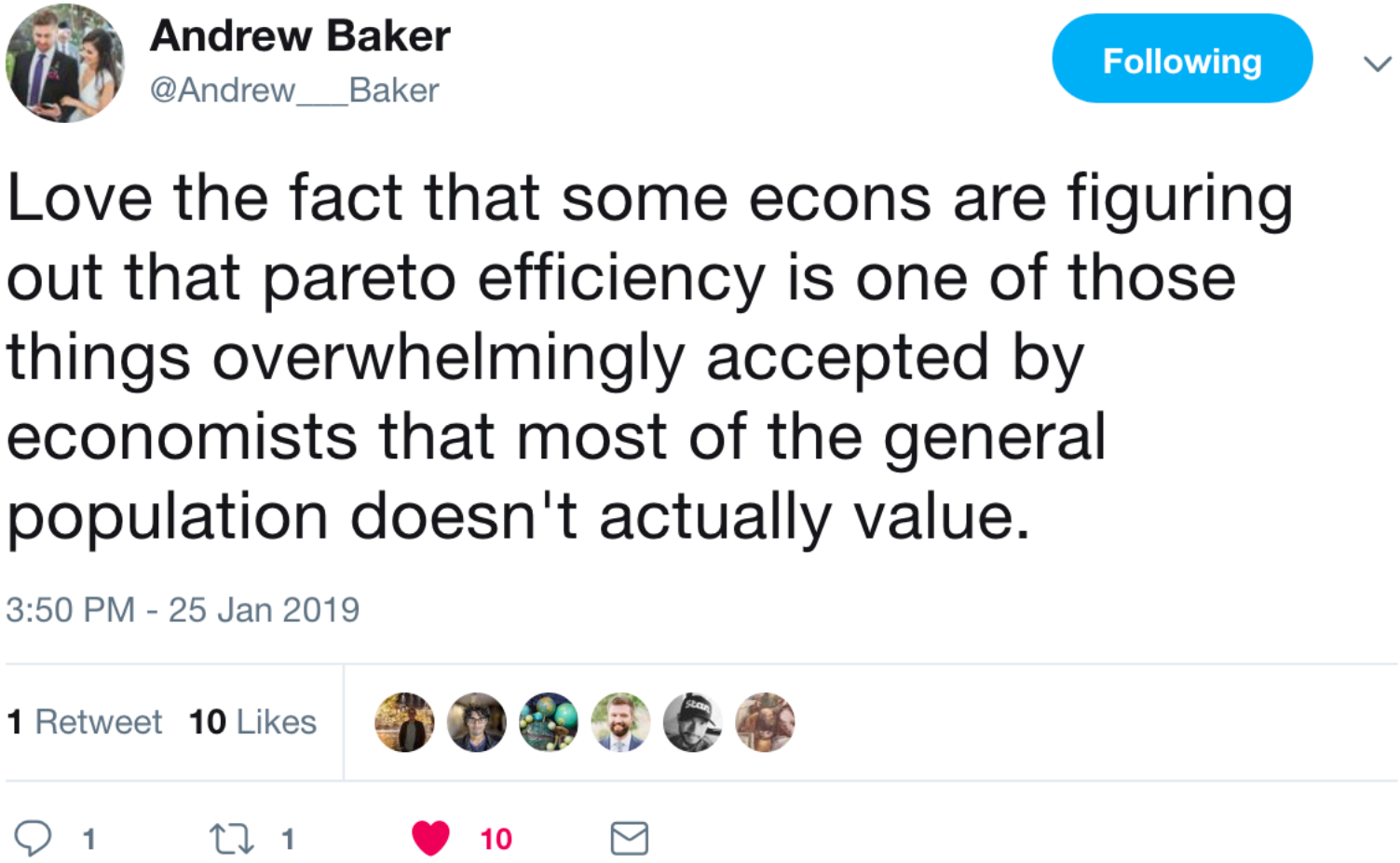
Efficiency

The most economic pie is consumed

Equity / Fairness / Justice

It matters who consumes how much of the pie

IS PARETO THE BEST STANDARD?



FAIRNESS MATTERS

Incorporating Fairness into Game Theory and Economics

By MATTHEW RABIN*

People like to help those who are helping them, and to hurt those who are hurting them. Outcomes reflecting such motivations are called fairness equilibria. Outcomes are mutual-max when each person maximizes the other's material payoffs, and mutual-min when each person minimizes the other's payoffs. It is shown that every mutual-max or mutual-min Nash equilibrium is a fairness equilibrium. If payoffs are small, fairness equilibria are roughly the set of mutual-max and mutual-min outcomes; if payoffs are large, fairness equilibria are roughly the set of Nash equilibria. Several economic examples are considered, and possible welfare implications of fairness are explored. (*JEL* A12, A13, D63, C70)

Most current economic models assume that people pursue only their own material self-interest and do not care about "social" goals. One exception to self-interest which has received some attention by economists is simple altruism: people may care not only about their own well-being, but also about

are also motivated to hurt those who hurt them. If somebody is being nice to you, fairness dictates that you be nice to him. If somebody is being mean to you, fairness allows—and vindictiveness dictates—that you be mean to him.

Clearly, these emotions have economic

JOURNAL ARTICLE

Incorporating Fairness into Game Theory and Economics

Matthew Rabin

The American Economic Review
Vol. 83, No. 5 (Dec., 1993), pp. 1281-1302 (22 pages)

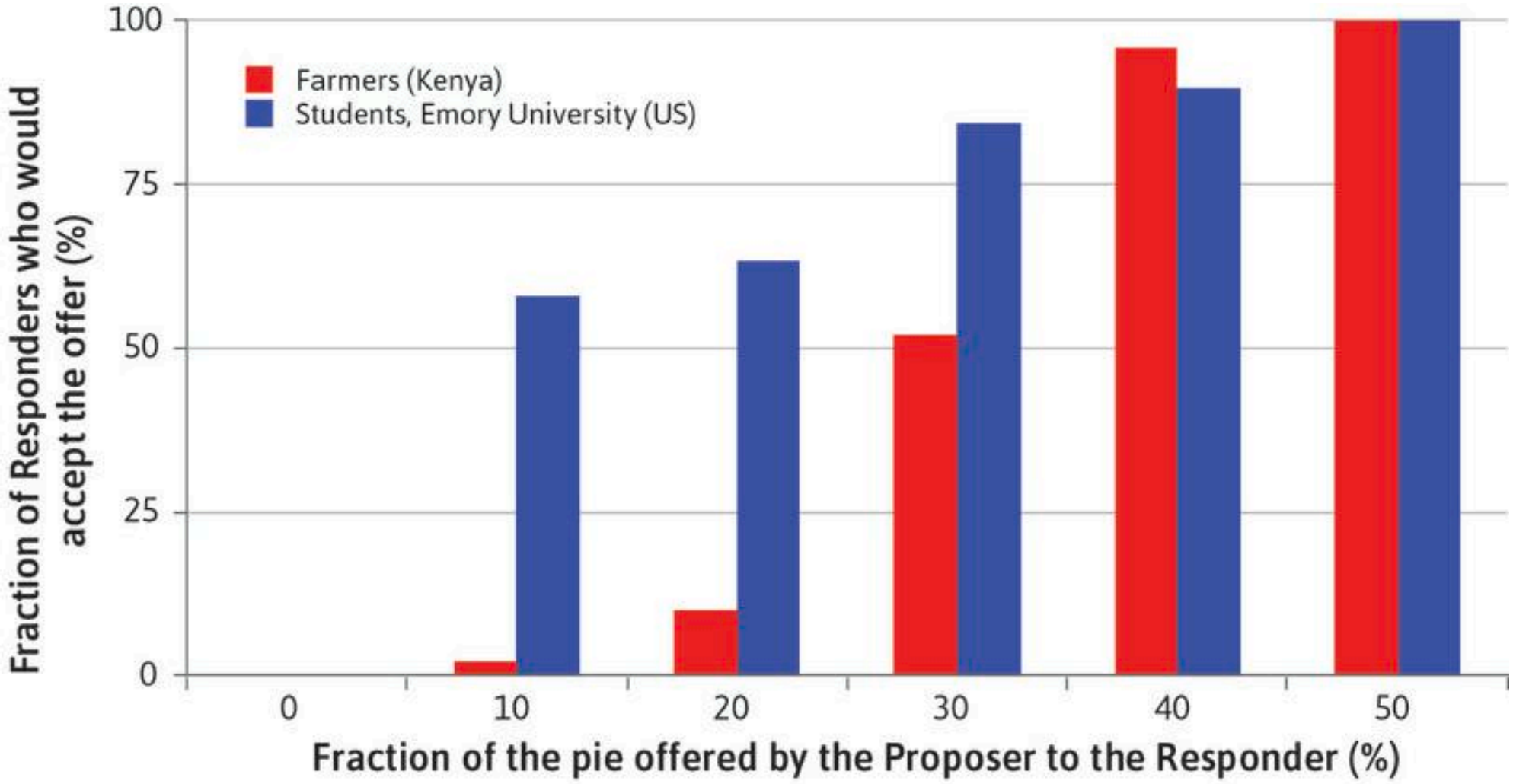
Published by: American Economic Association

THE ULTIMATUM GAME

Most rational, most efficient outcome is to accept any offer

But this doesn’t happen!

THE ULTIMATUM GAME



WHAT COUNTS AS FAIR?

Substantive fairness

What the allocation looks like

Procedural fairness

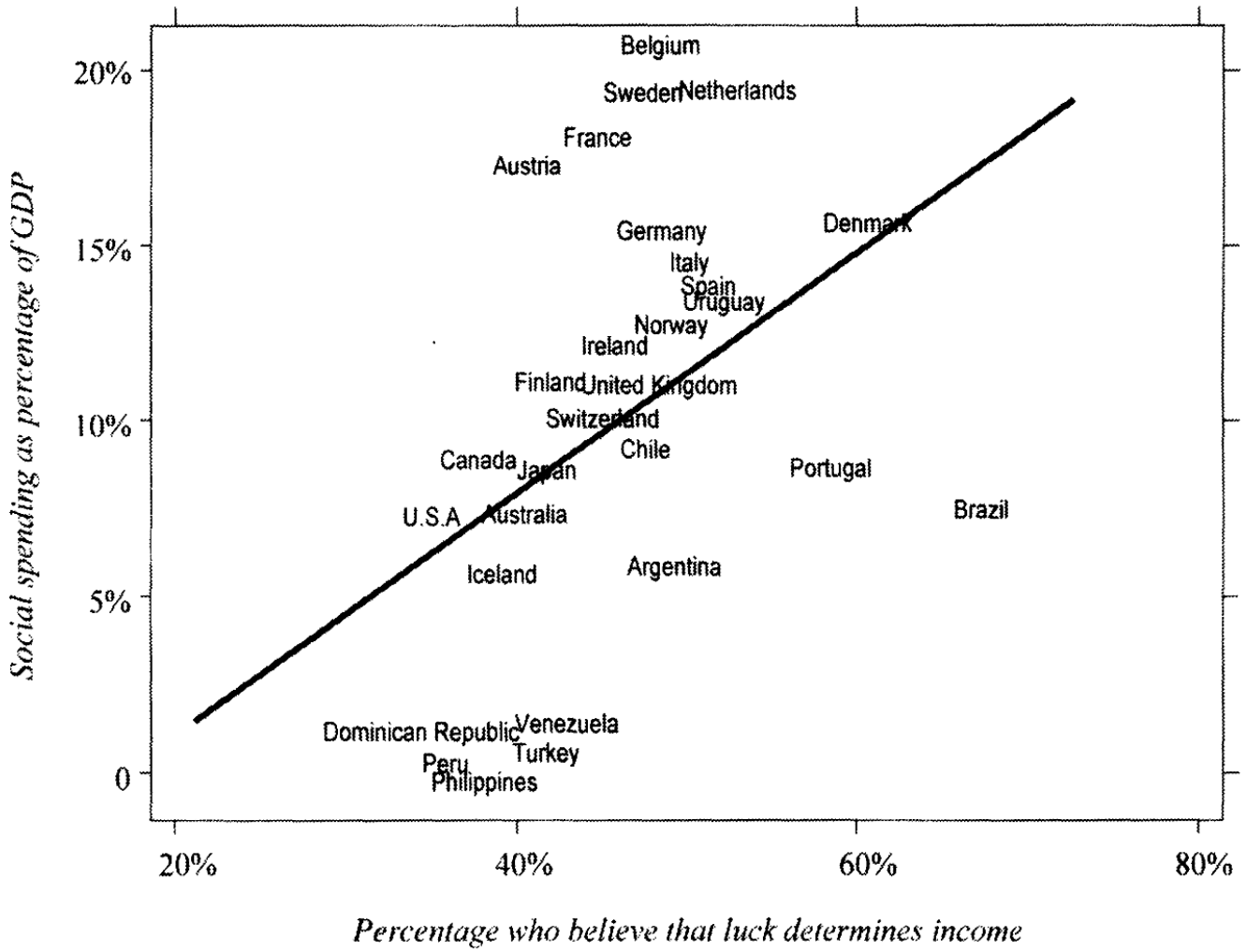
How the allocation got there

Veil of ignorance fairness

HOW DO WE DECIDE WHAT'S FAIR?

Social norms

LUCK, NORMS, AND TAXES



Our analysis thus sheds some light on why differences in attitudes toward the market mechanism are so rooted in American and European cultures. In Europe, opportunities for wealth and success have been severely restrained by class differences at least since medieval times.[27] At the time of the extension of the franchise, the distribution of income was perceived as unfair because it was generated more by birth and nobility than by ability and effort. The "invisible hand" has frequently favored the lucky and privileged rather than the talented and hard-working. Europeans have thus favored aggressive redistributive policies and other forms of government intervention. In the "land of opportunity," on the other hand, the perception was that those who were wealthy and successful had "made it" on their own. Americans have thus chosen strong property protection, limited regulation, and low redistribution, which in turn have resulted in fewer distortions, more efficient market outcomes, and a smaller effect of "luck." Today, the "self-made man" remains very much an American "icon"; and Americans remain more averse to government intervention than Europeans.

LUCK, NORMS, AND TAXES

Strong Reciprocity and the Welfare State

Christina M. Fong, Samuel Bowles and Herbert Gintis*

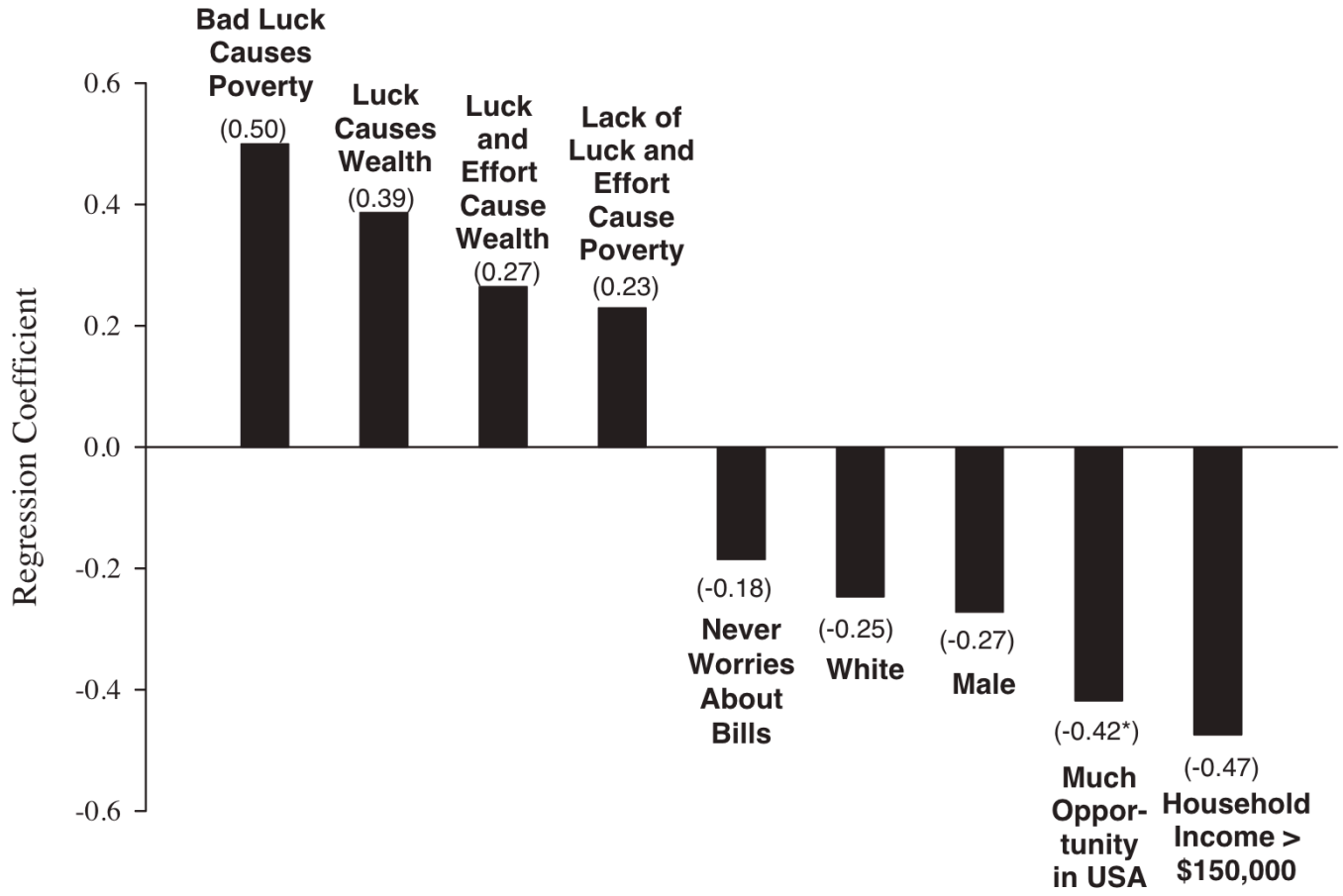
July 3, 2004

A man ought to be a friend to his friend and repay gift with gift.
People should meet smiles with smiles and lies with treachery.

The Edda, a 13th century collection of Norse epic verse.

1 Introduction

The modern welfare state is a remarkable human achievement. In the advanced economies, a substantial fraction of total income is regularly transferred from the better off to the less well off, and the governments that preside over these transfers are regularly endorsed by publics (Atkinson 1999). The modern welfare state is thus the most significant case in human history of a voluntary egalitarian redistribution of income among total strangers. What accounts for its popular support?



Is international trade efficient?

Is international trade just/fair?

PULLING POLICY LEVERS

TRAGEDY OF THE COMMONS

		Farmer 2	
		Use water normally	Double water use
Farmer 1	Use water normally	6, 6	2, 8
	Double water use	8, 2	3, 3

TRAGEDY OF THE COMMONS

50% tax on doubled use		Farmer 2	
		Use water normally	Double water use
Farmer 1	Use water normally	6, 6	2, 4
	Double water use	4, 2	1.5, 1.5

IS THAT TAX FAIR?

Procedurally?

Substantively?

Rawlsianly?

CHANGES IN TAXES

		Firm owner	
		Pay normal tax	Hire lawyers for loopholes
Government	Current policy Moderate tax rate	100, 500	85, 495
	High tax rate	150, 450	90, 490

What happens if taxes go up?

NASHES MATTER

Government tries to get to (High taxes, Pay normal rate)

Firms hire lawyers

New outcome is worse for everyone

Policies must be a Nash equilibrium

HOW TO AVOID UNINTENED CONSEQUENCES

Policy change shouldn't change preferences in bad ways

Israeli daycare | NCLB testing | ACA part-time hours

Policies must be a Nash equilibrium